



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,750	10/18/2005	Fusao Sekiguchi	KWM-0016	6127
23995	7590	08/01/2007		
RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005			EXAMINER KARACSONY, ROBERT	
			ART UNIT 2821	PAPER NUMBER
			MAIL DATE 08/01/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

TH

Office Action Summary

Application No.

10/553,750

Applicant(s)

SEKIGUCHI ET AL.

Examiner

Robert Karacsony

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>02122007, 05212007</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Applicant's arguments and amendments filed on May 23, 2007 have been received and entered in the case. Claims 1-7 are pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by *Kane* (US 4,381,566, hereinafter *Kane*).

Claim 1: *Kane* teaches a variable tuning antenna comprising:

a radiation element (127); and

a tuning circuit (131, 136, 137) connected to the radiation element in series, the tuning circuit comprising

a first inductance element (131) and

a parallel circuit (136, 137) which is connected to the first inductance element in series, the parallel circuit comprising

a second inductance element (136) and

a variable capacitance element (137) connected to each other in parallel,

wherein

the tuning circuit is set so that a combined reactance of the radiation element and the first inductance element and a combined reactance of the parallel circuit are canceled by each other (col. 5/lines 49-53), and

the parallel circuit does not resonate in a desired receiving frequency band (it is well known that the parallel circuit alone will not resonate in the frequency band of the antenna, where the frequency band is determined by inductor '131' combined with the parallel circuit), and wherein

the tuning circuit is formed so as to be tunable in the desired frequency band by varying the capacitance of the variable capacitance element (col. 5/lines 17-21).

Claim 2: *Kane* teaches the variable capacitance element comprises two variable capacitance diodes (137, 137'), the two variable capacitance diodes being connected in series in reverse polarity, and having a terminal of a control voltage (19) connected to a connecting part of the two variable capacitance diodes.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Kane* in view of *Kanayama et al.* (US 5,861,859, hereinafter *Kanayama*).

Claim 3: *Kane* teaches all of the limitations of claim 1, as discussed above. *Kane* fails to teach the radiation element comprises a first antenna element and a second antenna element

Art Unit: 2821

connected to each other electrically in series, the first antenna element and the second antenna element being formed in an electric length so as to resonate at a frequency within the desired frequency band by the total length, and so as to resonate at a first frequency band of a wide band in the desired frequency band with the tuning circuit, and so as to resonate at a second frequency band by only the first antenna element. *Kane* does teach that the antenna is small in size and has high gain by use of the distributed constant loading element combined with the tuning unit (col. 2/lines 29-32). *Kanayama* teaches a retractable antenna for a portable radio made up of a helical antenna electrically connected in series to the top end of a rod antenna, which both of their lengths combined, resonate together at a frequency of a wide band when the antenna is extended out of a case and where only the helical antenna resonates at another frequency when the antenna is retracted into a case (col. 1/lines 34-39). *Kanayama* also teaches the demand for reducing the size of the antenna in portable devices (col. 1/lines 10-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the antenna of *Kane* with the invention of *Kanayama* in order to have utilized the small size and high gain of the antenna of *Kane*.

5. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kane* in view of *Kanayama* as applied to claim 3 above, and further in view of *Makino* (US 5,446,469 hereinafter *Makino*).

Claim 5: *Kane* in view *Kanayama* teaches all of the limitations of claim 3, as discussed above. They fail to teach a portable wireless device comprising:

a transmitting/receiving circuit ;

a casing surrounding the transmitting/receiving circuit;

Art Unit: 2821

a feeding part located near to the casing and connected to the transmitting/receiving circuit electrically;

a third antenna element connected to the feeding part,

wherein the variable tuning antenna comprises any one of the antenna defined in claims 1 to 4, and the third antenna element comprises an antenna resonating at a third frequency band different from that of the variable tuning antenna, so that two frequency bands of a first frequency band of a wide band obtained by the variable tuning antenna and the third frequency band can be transmitted and received.

However, Makino teaches a portable cellular phone (col. 1/lines 8-10) comprising a radio circuit (Abstract), a case surrounding the radio circuit (fig. 1A, 5), a point near the casing where the antenna connects to a radio circuit (fig. 1A) and a helical antenna element (6) attached to the top of the phone case and connected to the point that connects the radio circuit that is capacitively coupled (col. 1/lines 36-38) to a whip antenna (1) that extends/retracts through the helical antenna (figs. 1A and 1B) which increases the frequency band width (col. 3/lines 1-5). The helical antenna has a resonance frequency different from that of the variable tuning antenna, which is determined by the parameters of the helical antenna, whereas the variable tuning antenna resonates at a frequency determined by its parameters. When the whip antenna is extended out of the casing, it transmits/receives together with the helical antenna. When it is retracted into the casing only the helical antenna transmits/receives (col. 2/lines 13-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the variable tuning antenna of *Kane* in view of *Kanayama* with the

Art Unit: 2821

portable cellular phone of *Makino* in order to have increased the frequency band width of the device.

Claim 6 is rejected for substantially the same reasons as claims 3 and 5, as discussed above.

Claim 7: *Kane* in view of *Kanayama* and *Makino* teach the variable tuning antenna extending/retracting in and out of the case, which when it is retracted into the case, the first and third antenna will form an electrical length so as to resonate at the same frequency band and also strengthen radio waves transmitted and received in phases with each other (*Makino*, col. 3/lines 37-46).

Claim 4 is considered a suggested use limitation and is not given any patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Response to Arguments

6. Applicant's arguments, see page 7, line 9 – page 11, line 5, filed May 23, 2007, with respect to the rejection(s) of claim(s) 1 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of *Kane* and is described above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Karacsony whose telephone number is 571-270-1268. The examiner can normally be reached on M-F 7:30 am - 5:00 pm EST.

Art Unit: 2821

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RK *RL*

/Hoang V. Nguyen/

Primary Examiner, AU 2821